ABSTRACT

A CAM device memory array having different types of memory cells is disclosed. A CAM device memory array is subdivided into at least two different portions, where each portion uses only one particular type of CAM cell, and each portion is dedicated to storing a particular type of data. In particular, at least one portion consists of binary CAM cells andthe other portion consists of ternary CAM cells. The portions can be partitioned along the row, or matchline, direction or along the bitline direction. Since particular data formats only require predefined bit positions of a word of data to be ternary in value, the remaining binary bit positions can be stored in binary CAM cells. Therefore, the CAM device memory array will occupy an overall area that is less than memory arrays of the same density consisting exclusively of ternary CAM cells.